

IN THE CLAIMS:

1. (currently amended) A constant velocity joint in the form of a counter track joint comprising:

an outer joint part comprising a first longitudinal axis (A_{12}) and an attaching end and an aperture end which are axially opposed relative to one another, and first outer ball tracks and second outer ball tracks;

an inner joint part comprising a second longitudinal axis (A_{22}) and an attaching mechanism for a shaft pointing to the aperture end of the outer joint part, and first inner ball tracks and second inner ball tracks, the first outer ball tracks and the first inner ball tracks form first pairs of tracks with one another, and the second outer ball tracks and the second inner ball tracks form second pairs of tracks with one another, the pairs of tracks each accommodate a torque transmitting ball; and

a ball cage positioned between the outer joint part and the inner joint part and comprising circumferentially distributed cage windows which each accommodate at least one of the balls;

wherein, when the joint is in the aligned condition, an aperture angle (δ_1) of the first pairs of tracks opens in a central joint plane (E) from the aperture end to the attaching end of the outer joint part;

wherein, when the joint is in the aligned condition, an aperture angle (δ_2) of the second pairs of tracks opens in the central joint plane (E) from the attaching end to the aperture end of the outer joint part, and

wherein central track lines (L_{18} , L_{19}) of the first pairs of tracks each have a turning point (T_{1-2}) and wherein, a center angle (β) from the joint center M to the turning point (T_{1-2}), with reference to the central joint plane (E), is greater than 4° .

2.-35. (cancelled)

36. (new) A constant velocity joint according to claim 1, wherein the center angle (β) from the joint center M to the turning point (T_{1-2}), with reference to the central joint plane (E), is greater than 5° .

37. (new) A joint according to claim 1, wherein the center angle (β) from the joint center M to the turning point (T_{1-2}), with reference to the central joint plane (E), is less than 12° .

38. (new) A constant velocity joint according to claim 1, wherein a tangent at the central track lines (L_{18} , L_{19}) of the first pairs of tracks in the turning point (T_{1-2}) forms a turning point angle (α) with the respective longitudinal axis (A_{12} , A_{22}), and a perpendicular line on said tangent forms a turning point angle (α) with the central joint plane (E), which is defined by

$$\alpha \geq \beta + \arcsin \left[\frac{O_2}{R_2} - \sin(\beta + 90^\circ) \right]$$

wherein O_2 is an axial distance of the point of intersection of a perpendicular line on the tangent and the respective longitudinal axis (A_{12} , A_{22}) from the central joint plane (E), and wherein R_2 is the distance of said point of intersection from the turning point (T_{1-2}).

39. (new) A constant velocity joint according to claim 38, wherein the turning point angle (α) is defined by:

$$\alpha \geq \beta + \arcsin \left[\frac{O_2 + a \cdot \tan(\beta)}{R_2} - \sin(\beta + 90^\circ) \right]$$

when the respective central track line (L_{18} , L_{19}) from the central joint plane (E) to the turning point (T_{1-2}) comprises a radius (R_2) whose center (M_2) comprises an axial distance (O_2) from the central joint plane (E) and a radial distance (a) from the respective longitudinal axis (A_{12} , A_{22}) towards the turning point (T_{1-2}).

36. (new) A constant velocity joint according to claim 1, wherein the center angle (β) from the joint center M to the turning point (T_{1-2}), with reference to the central joint plane (E), is greater than 5° .

37. (new) A joint according to claim 1, wherein the center angle (β) from the joint center M to the turning point (T_{1-2}), with reference to the central joint plane (E), is less than 12° .

38. (new) A constant velocity joint according to claim 1, wherein a tangent at the central track lines (L_{18} , L_{19}) of the first pairs of tracks in the turning point (T_{1-2}) forms a turning point angle (α) with the respective longitudinal axis (A_{12} , A_{22}), and a perpendicular line on said tangent forms a turning point angle (α) with the central joint plane (E), which is defined by

$$\alpha \geq \beta + \arcsin \left[\frac{O_2}{R_2} - \sin(\beta + 90^\circ) \right]$$

wherein O_2 is an axial distance of the point of intersection of a perpendicular line on the tangent and the respective longitudinal axis (A_{12} , A_{22}) from the central joint plane (E), and wherein R_2 is the distance of said point of intersection from the turning point (T_{1-2}).

39. (new) A constant velocity joint according to claim 38, wherein the turning point angle (α) is defined by:

$$\alpha \geq \beta + \arcsin \left[\frac{O_2 + a \cdot \tan(\beta)}{R_2} - \sin(\beta + 90^\circ) \right]$$

when the respective central track line (L_{18} , L_{19}) from the central joint plane (E) to the turning point (T_{1-2}) comprises a radius (R_2) whose center (M_2) comprises an axial distance (O_2) from the central joint plane (E) and a radial distance (a) from the respective longitudinal axis (A_{12} , A_{22}) towards the turning point (T_{1-2}).

40. (new) A constant velocity joint according to claim 38, wherein the turning point angle (α) is defined by:

$$\alpha \geq \beta + \arcsin \left[\frac{O_2 - b \cdot \tan(\beta)}{R_2} - \sin(\beta + 90^\circ) \right]$$

when the respective central track line (L_{18} , L_{19}) in the central joint plane (E) up to the turning point (T_{1-2}) comprises a radius (R_2) whose center (M_2) comprises an axial distance (O_2) from the central joint plane (E) and a radial distance (b) from the respective longitudinal axis (A_{12} , A_{22}) towards the turning point (T_{1-2}).

41. (new) A constant velocity joint according to claim 1, wherein the central track lines (L_{18} , L_{19}) comprise a radius (R_2) and, as from the turning point (T_{1-2}), a counter radius (R_1).

42. (new) A constant velocity joint according to claim 1, wherein the central track lines (L_{18} , L_{19}) comprise a first radius (R_2) and, as from the turning point (T_{1-2}), a counter radius (R_1) as well as a smaller radius (R_3) which smaller radius (R_3) adjoins the first radius (R_2) on the opposite side and has the same sense of curvature.

43. (new) A constant velocity joint according to claim 1, wherein the central track lines (L_{18} , L_{19}) comprise a first radius (R_2), a straight line following the first radius (R_2) from the turning point (T_{1-2}) on, and a smaller radius (R_3), which smaller radius (R_3) adjoins the first radius (R_2) on the opposite side and has the same sense of curvature.

44. (new) A constant velocity joint according to claim 1, wherein central track lines (L_{20} , L_{21}) of the second ball tracks comprise a radius (R_5) and an axis-parallel straight line which follows the radius (R_5) towards the aperture end.

45. (new) A constant velocity joint according to claim 1, wherein central track lines (L_{20} , L_{21}) of the second ball tracks comprise a radius (R_5) and a counter radius (R_4) which follows towards the aperture end.

46. (new) A constant velocity joint according to claim 1, wherein the central track lines (L_{20} , L_{21}) of the second ball tracks are formed of a single radius (R_5).

47. (new) A constant velocity joint according to claim 1, wherein the joint is 6-ball joint.

48. (new) A constant velocity joint according to claim 1, wherein the joint is 8-ball joint.

49. (new) A constant velocity joint according to claim 1, wherein the cage windows for the first balls are shorter in the circumferential direction than the cage windows for the second balls.

50. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and a radius of curvature (R_1) of the track center lines of the first pairs of tracks satisfies the following: $1.5 < \text{PCDB} / R_1 < 1.9$.

51. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and a second radius of curvature (R_2) of the track center lines of the first pairs of tracks satisfies the following: $1.8 < \text{PCDB} / R_2 < 2.2$.

52. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and a third radius of curvature (R3) of the track center lines of the first pairs of tracks satisfies the following: $2.3 < \text{PCDB} / \text{R3} < 2.7$.

53. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and a fourth radius of curvature (R4) associated with track center lines of the second pairs of tracks satisfies the following: $2.1 < \text{PCDB} / \text{R4} < 2.5$.

54. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and a fifth radius of curvature (R5) associated with track center lines of the second pairs of tracks satisfies the following: $1.8 < \text{PCDB} / \text{R5} < 2.2$.

55. (new) A constant velocity joint according claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and an axial center offset (O_2) of a second radius of curvature (R2) of the track center lines of the first pairs of tracks satisfies the following: $12 < \text{PCDB} / O_2 < 16$.

56. (new) A constant velocity joint according claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and an axial center offset (O_5) of a fifth radius of curvature (R5) associated with track center lines of the second pairs of tracks satisfies the following: $12 < \text{PCDB} / O_5 < 16$.

57. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and an outer diameter (OD) of the outer joint part satisfies the following: $0.6 < \text{PCDB} / \text{OD} < 0.8$.

58. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and an axial length (L) of the inner joint part satisfies the following: $2.1 < \text{PCDB} / L < 2.5$.

59. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and a ball diameter (DB) satisfies the following: $3.4 < \text{PCDB} / \text{DB} < 4.0$.

60. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter of the balls (PCDB) and the pitch circle diameter of the splines (PCDS) of a plug-in aperture of the inner joint part satisfies the following: $2.1 < \text{PCDB} / \text{PCDS} < 2.5$.

61. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter (PCDB) of the balls and an outer diameter (DCA) of the ball cage satisfies the following: $0.75 < \text{PCDB} / \text{DCA} < 1.05$.

62. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter (PCDB) of the balls and an inner diameter (DCI) of the ball cage (16) satisfies the following: $0.85 < \text{PCDB} / \text{DCI} < 1.15$.

63. (new) A constant velocity joint according claim 1, wherein a ratio of the pitch circle diameter (PCDB) of the balls and a circumferential web width (W) of the ball cage satisfies the following: $7.5 < \text{PCDB} / W < 11.5$.

64. (new) A constant velocity joint according to claim 1, wherein a ratio of the pitch circle diameter (PCDB) of the balls and a circumferential length (L1) of first cage windows of the ball cage satisfies the following: $2.8 < \text{PCDB} / L1 < 3.4$.

65. (new) A constant velocity joint according claim 1, wherein a ratio of the pitch circle diameter (PCDB) of the balls and a circumferential length (L2) of second cage windows of the ball cage satisfies the following: $2.6 < \text{PCDB} / L2 < 3.2$.

66. (new) A driveshaft comprising two constant velocity joints and an intermediate shaft, wherein at least one of the constant velocity joints is a constant velocity joint according to claim 1.

67. (new) A driveshaft according to claim 66, wherein the intermediate shaft comprises an axial plunging unit.

68. (new) A motor vehicle having at least two driveshafts which each comprise two constant velocity joints and an intermediate shaft and which each, in the form of sideshafts, connect a differential drive with a wheel hub unit, wherein at least one of the joints of each driveshaft is a joint according to claim 1 and wherein a shaft journal of same is inserted into the differential drive.

69. (new) A motor vehicle having at least two driveshafts which each comprise two constant velocity joints and an intermediate shaft and which each, in the form of sideshafts, connect a differential drive with a wheel hub unit, wherein at least one of the joints of each driveshaft is a joint according to claim 1 and wherein a shaft journal of same is inserted into the wheel hub unit.